# MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR
## THIRD YEAR
## B. Sc. MATHEMATICS  2016-17
## PAPER – III(C)
### MATHEMATICAL STATISTICS

Duration: 3 Hours                                                                 Max. Marks: 75

Paper –III (Optional): Any one of the following papers –

### UNIT -I
Probability: Definitions of Probability, Addition and Multiplication laws, Conditional probability
Independent events, Baye's Theorem.

### UNIT II
Random variable, Distribution function, Probability mass & density functions, probability
distribution, Joint, marginal and conditional probability functions.

### UNIT –III
Mathematical expectation and Moments, Addition & Multiplication law, Covariance,
Expectation and Variance of linear combination of two variables, Moment generating, cumulant
generating & characteristic functions.

### UNIT –IV
Theoretical Probability distributions- Binomial, Poisson and Normal distributions and their
properties.

### UNIT –V
Curve fitting by the principle of least squares, fitting of straight line and parabola, Bivariate
linear correlation and regression.

Books Recommended:

1.     Mathematical Statistics, J. N. Kapur & H.C. Saxana, S. Chand & Co., New Delhi.
2.     Fundamentals of Mathematical Statistics, V. K. Kapoor & S.C. Gupta, Sultan Chand &
       Sons, New Delhi.
3.     Mathematical Statistics by Dr. Gokhroo & Saini.

### NOTE:

Candidates who have offered Statistics as an optional subject will not be permitted to offer the
paper III (B) and III (C). Candidates who have offered Computer science as an optional subject
will not be permitted to offer paper III (B).